

AMENDMENTS TO THE CLAIMS:

Claim 1 (currently amended): A sequence of synthetic or natural retroelements, which comprises an insertion sequence incorporated in a region that can be transferred into a target cell and integrated into a recombinant provirus when said target cell is infected by a retrovirus comprising said sequence of retroelements; said insertion sequence comprises a nucleotide sequence of interest which can be integrated into the genome of the target cell, and a recognition sequence; said retroelements comprise a 3' and/or 5' LTR region and said insertion sequence is incorporated into said 3' LTR region ~~and/or~~ 5' LTR region.

Claims 2-24 (canceled)

Claim 25 (currently amended): A nucleic acid molecule comprising retroelements that comprise a recombinant provirus when a target cell is infected by a retrovirus containing said retroelements; said retroelements comprise a 3' and/or 5' LTR region; an insertion sequence located in the 3' LTR region ~~and/or~~ the 5' LTR region; said insertion sequence comprises a nucleotide sequence of interest, which can be expressed in the target cell and which can be transferred with said retroelements into the target cell and integrated into the recombinant provirus; and a recognition site for the elimination of proviral sequences in the recombinant provirus, which are not necessary for expression of the nucleotide sequence of interest in the target cell after integration of the recombinant provirus into the target cell.

Claim 26-27 (canceled)

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- Claim 28 (currently amended): The nucleic acid molecule as claimed in Claim 25, wherein the retroelements comprise a U3 region of a said 3' LTR, a U5 region of a said 5' LTR, and an R region, and the sequence of interest and the recognition sequence are incorporated into one of said regions.
- Claim 29 (previously presented): The nucleic acid molecule as claimed in Claim 25, wherein the recognition sequence is recognized by a recombinase.
- Claim 30 (previously presented): The nucleic acid molecule as claimed in Claim 29, wherein the recognition sequence, which can be recognized by a recombinase, is situated upstream or downstream from the nucleotide sequence of interest.
- Claim 31 (previously presented): The nucleic acid molecule as claimed in Claim 25, wherein the recognition sequence is located upstream or downstream from the nucleotide sequence of interest.
- Claim 32 (previously presented): The nucleic acid molecule as claimed in Claim 25, wherein said nucleic acid molecule comprises a nucleotide sequence coding for a recombinase that recognizes said recognition site.
- Claim 33 (previously presented): The nucleic acid molecule as claimed in Claim 32, wherein the retroelements comprise 5' LTR and 3' LTR regions and the nucleotide sequence coding for the recombinase is situated between the 5' LTR and 3' LTR regions.
- Claim 34 (previously presented): The nucleic acid molecule as claimed in Claim 32, wherein the nucleotide sequence coding for the recombinase encodes CRE protein.

- Claim 35 (previously presented): The nucleic acid molecule as claimed in Claim 33, wherein the nucleotide sequence coding for the recombinase encodes CRE protein.
- Claim 36 (previously presented): The nucleic acid molecule as claimed in any one of Claims 33, 34, or 35, wherein the recognition sequence comprises a Lox P recognition site.
- Claim 37 (previously presented): The nucleic acid molecule as claimed in Claim 25, wherein the nucleotide sequence of interest encodes a polypeptide or RNA.
- Claim 38 (previously presented): The nucleic acid molecule as claimed in Claim 37, wherein the RNA is antisense RNA or a ribozyme sequence.
- Claim 39 (currently amended): A nucleic acid molecule contained in a plasmid deposited under C.N.C.M. Accession No. I-1599, comprising retroelements that further comprise:
- (a) a recombinant provirus upon infection of a target cell by one or more retroviruses comprising said retroelements;
 - (b) one or more regions chosen from a 3' LTR region comprising a U3 region, a 5' LTR region comprising a U5 region, and an R region;
 - (c) an insertion sequence located within the 3' and/or the 5' LTR regions comprising a nucleotide sequence of interest that encodes a molecule chosen from an antisense RNA, a ribozyme, and a polypeptide which
- (i) can be expressed in the target cell, and

(ii) can be transferred with said retroelements into the target cell and integrated into the recombinant provirus;

(d) a recombinase encoding a CRE protein, situated either upstream or downstream from the nucleotide sequence of interest, and

(e) a recognition site for the elimination of those proviral sequences unnecessary for expression of the nucleotide sequence of interest in the target cell after integration of the recombinant provirus that is

(i) recognized by the recombinase, and

(ii) comprises a LoxP recognition site.

Claim 40 (currently amended): A retroviral vector comprising a nucleic acid molecule according to any one of Claims 25, 28, and 29.

Claim 41 (previously presented): The sequence of retroelements as claimed in Claim 1, wherein the recognition sequence is a single recognition sequence that can be recognized by a recombinase.

Claim 42 (previously presented): The sequence of retroelements as claimed in Claim 1, wherein the sequence is comprised of retroviral DNA.

Claim 43 (currently amended): The sequence of retroelements as claimed in Claim 1, wherein the retroelements comprise a U3 region of a said 3' LTR, a U5 region of a said 5' LTR, and an R region, and the sequence of interest and the recognition sequence are incorporated into one of said regions.

Claim 44 (previously presented): The sequence of retroelements as claimed in Claim 41, wherein said retroelements comprise U3 of 3' LTR and/or U5 of 5' LTR and the insertion sequence is incorporated into U3 and/or U5.

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Claim 45 (currently amended): The nucleic acid molecule as claimed in Claim 28, wherein said retroelements comprise U3 of a 3' LTR and/or U5 of a 5' LTR₁ and the sequence of interest and the recognition sequence are incorporated into U3 and/or U5.

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